



Howard Public Works Department

Salting and Shelving Operations

SALTING

Salting will commence when, in the opinion of the Public Works Department, an unsafe condition for travel exists. Salting operations can vary greatly, depending on whether there is a need for village-wide coverage or if the slippery areas are isolated.

When icy conditions occur in the village, hazardous situations will present themselves in numerous locations at the same time. It must be realized that salting crews cannot be in all places at all times, and the effect of salting is not immediate.

Clearing Wisconsin's winter roads usually requires de-icing chemicals. In Wisconsin, the most common chemical, salt (sodium chloride), usually comes from mined rock salt that has been crushed, screened and treated with an anti-caking agent. De-icing salt is relatively light – just over one ton per cubic yard and comes as a mixture of 3/8" granules to fine crystals.

Road salt works by lowering the freezing point of water. Even when the pavement temperature is below freezing, it holds some heat which can help melt snow and ice. A 23.3% concentration of salt water will not freeze until the temperature is below 0 F. As temperatures drop, the amount of salt needed to melt a given quantity of ice increases significantly. Salt can melt five times as much ice at 30 F as it can at 20 F.

Melting rates are significantly reduced at temperatures below 20 F, and salting becomes an expensive tactic in addition to the associated negative environmental impacts. Salt will be used on primary streets, higher volume intersections where start/stop movements are frequent, on bridges, and on steep hills or curves where slippery conditions make driving hazardous. The use of salt shall be minimized during extremely cold temperatures. Other factors that strongly influence the melting rate of ice include chemical concentration, application rate, air temperature, pavement temperature, pavement surface, traffic volume and time of application.

Anti-icing is a road maintenance strategy that is performed to keep the bond between ice and the pavement surface from forming. It involves applying ice control chemicals, typically with a liquid spray, before or at the very beginning of a storm (this may be seen as stripes on the pavement). Using this strategy, especially on hills and bridges, reduces total chemical use and allows a higher level of service to the traveling public.

SNOW REMOVAL AND SHELVING

Snow removal and or pushing snow beyond the curb (called shelving) may be necessary after heavy storms or after a series of storms in areas where there is limited or no snow storage area. Snow removal does not occur every time plowing operations occur and will vary depending on the timing of the storm, the amount of precipitation received, and the forecast. The equipment used to remove snow from streets includes graders, end loaders, large snow blowers and dump trucks.

Public Works crews will remove snow first from areas where it causes the most disruption to traffic and parking. This will generally include arterial streets with little or no terrace area. The next priority will be collector streets. Generally, snow removal and shelving are minimized as it is expensive to accomplish. As time permits additional streets may be selected for widening to the face of the curb. This may be necessary due to traffic congestion, parking, school activities or other traffic concerns.